

CLAIMS

What is claimed is:

1           1.    A medical system that can denature a cornea,  
2 comprising:

3           an energy device that can direct energy to a focal  
4 point within the cornea; and,

5           a movement device that moves the focal point of the  
6 energy.

7           2.    The medical device of claim 1, wherein said energy  
8 device includes a laser.

1           3.    The medical device of claim 2, wherein said  
2 movement device includes a lens and a mechanism for moving  
3 a focal point of said lens.

4           4.    The medical device of claim 3, wherein said  
5 mechanism includes a stepper motor.

6           5.    The medical device of claim 3, wherein said  
7 mechanism includes a solenoid.

8           6.    The medical device of claim 3, wherein said  
9 mechanism includes a shaped memory metal.

10          7.    The medical device of claim 3, wherein said  
11 movement device includes a feedback sensor.

12          8.    The medical device of claim 7, wherein said  
13 feedback sensor includes an optical encoder.

14          9.    The medical device of claim 7, wherein said  
15 feedback sensor includes a linear variable differential  
16 transformer.

17          10.   The medical device of claim 7, wherein said  
18 feedback sensor includes a hall effect sensor.

19          11.   The medical device of claim 7, wherein said  
20 feedback sensor includes a proximity sensor.

1           12. The medical device of claim 1, wherein said energy  
2 device is a non-coherent light source.

1           13. The medical device of claim 12, wherein said  
2 movement device includes a lens and a mechanism for moving  
3 a focal point of said lens.

4           14. The medical device of claim 13, wherein said  
5 mechanism includes a stepper motor.

6           15. The medical device of claim 13, wherein said  
7 mechanism includes a solenoid.

8           16. The medical device of claim 13, wherein said  
9 mechanism includes a shaped memory metal.

10           17. The medical device of claim 13, wherein said  
11 movement device includes a feedback sensor.

12           18. The medical device of claim 17, wherein said  
13 feedback sensor includes an optical encoder.

14           19. The medical device of claim 17, wherein said  
15 feedback sensor includes a linear variable differential  
16 transformer.

17           20. The medical device of claim 17, wherein said  
18 feedback sensor includes a hall effect sensor.

19           21. The medical device of claim 17, wherein said  
20 feedback sensor includes a proximity sensor.

21           22. The medical device of claim 1, wherein said energy  
22 device includes an ultrasonic transducer.

23           23. The medical device of claim 22, wherein said  
24 movement device includes a mechanism for moving said  
25 ultrasonic transducer.

26           24. The medical device of claim 23, wherein said  
27 mechanism includes a stepper motor.

28           25. The medical device of claim 23, wherein said  
29 mechanism includes a solenoid.

30           26.     The medical device of claim 23, wherein said  
31 mechanism includes a shaped memory metal.

32           27.     The medical device of claim 23, wherein said  
33 movement device includes a feedback sensor.

34           28.     The medical device of claim 27, wherein said  
35 feedback sensor includes an optical encoder.

36           29.     The medical device of claim 27, wherein said  
37 feedback sensor includes a linear variable differential  
38 transformer.

39           30.     The medical device of claim 27, wherein said  
40 feedback sensor includes a hall effect sensor.

41           31.     The medical device of claim 27, wherein said  
42 feedback sensor includes a proximity sensor.

43           32.     A medical device that can denature a cornea,  
44 comprising:

45 a plurality of energy devices that can each direct  
46 energy to a different focal point within the cornea; and,

47 a controller that can select the energy devices so that  
48 the focal point of energy varies through the cornea.

1 33. The medical device of claim 32, wherein said  
2 energy devices include light sources.

1 34. The medical device of claim 32, wherein said  
2 energy devices include ultrasonic sources.

1 35. The medical device of claim 32, wherein said  
2 selector includes a controller.

1 36. A method for denaturing a cornea, comprising:

2 directing energy onto a focal point within the cornea;  
3 and,

4 varying the focal point of the energy.

1        37. The method of claim 36, wherein the energy creates  
2 a column of denatured tissue within a stroma of the cornea.

1        38. The method of claim 36, wherein the energy is  
2 light.

1        39. The method of claim 36, wherein the energy is  
2 ultrasonic.